

Allergies

What is an allergy?

Allergy is a broad term that characterizes a number of disorders that occur via the same mechanism. Common allergic disorders include hay fever or allergic rhinitis (typical runny nose, sneezing, itchy, watery eyes etc.), hives, eczema or atopic dermatitis, asthma, and the most severe form, anaphylaxis (tightening in the mouth, difficulty breathing, loss of consciousness).

What causes an allergic reaction in my body?

Almost anything can cause an allergic reaction including pollens, animal fur or dander, certain foods, medications, metals, perfumes etc. There is some component of these things, some molecule or protein that our immune system is overly sensitive to; this molecule is called an antigen. These antigens can get into our bodies anyway possible, for example by ingesting, breathing, or touching the offending agent. The ways they enter our body also seems to determine the symptoms we experience. For example if its something we breath in we are more like to have hay fever or asthma symptoms vs. something we touch that may cause eczema. Some antigens are only able to get into our body by one mechanism (e.g. you may have a serious allergy to peanuts, but you can touch peanuts without a problem).

What is the mechanism in my body causing the allergic reaction?

As previously mentioned, our immune systems may be overly sensitive to certain antigens. This means that when these antigens find their way into our bodies we have lots of antibodies that recognize these antigens and bind to them. Once bound, the antigen-antibody complexes activate special immune cells called mast cells and basophils. These activated cells cause an immune reaction by releasing immune mediator substances that we commonly hear about like histamine, prostaglandins, leukotrienes, cytokines etc. It is the release of these mediator substances that cause allergic symptoms; thus, most of the treatments we have are directed at suppressing them.

How can allergies be prevented?

The most obvious strategy is to avoid the aggravating allergens. Remember the names of medications that cause an allergic reaction so you can let healthcare personnel know, and these drugs can be avoided. Avoid foods that cause reaction including food mixtures that use them as an ingredient. For example, if allergic to strawberries check the ingredients of certain juice mixes to make sure they don't contain strawberry, or if you are allergic to peanuts avoid foods cooked with peanut oil.

Avoiding other allergens like pollens can be difficult; however, if you anticipate you might be exposed aggravating pollens you can prophylactically use an anti-

histamine which blocks the release of histamine and prevents the allergic response.

What can I do if I have an allergic reaction?

What you do will often depend on the symptoms you are having. In the case of mild allergic reactions, like eczema, hives or hay fever, sometimes all that is needed is to remove oneself from the aggravating environment, and things will settle on their own. However, anti-histamines can improve symptoms (like itching skin, runny nose etc.) from these types of reactions. Many good formulations are available over the counter; some popular brand names are Reactine, Benadryl or Claritin. In more severe, longer lasting cases of eczema or hives there are some steroid creams that your doctor can prescribe to reduce the inflammation.

In an asthma type reaction there are some special medications that your doctor can prescribe for you that will help open up the tiny airways in your lungs and make it easier to breath. Asthma can be very severe and if you find it very difficult to breath and the medications are not working you should seek medical attention immediately.

Anaphylactic reactions are very severe and can quickly lead to death without appropriate medical intervention. For people who know they are prone to anaphylaxis they should get an epi-pen prescribed to them and have it accessible at all times. If you are having an anaphylactic reaction you should quickly get to your nearest emergency department.